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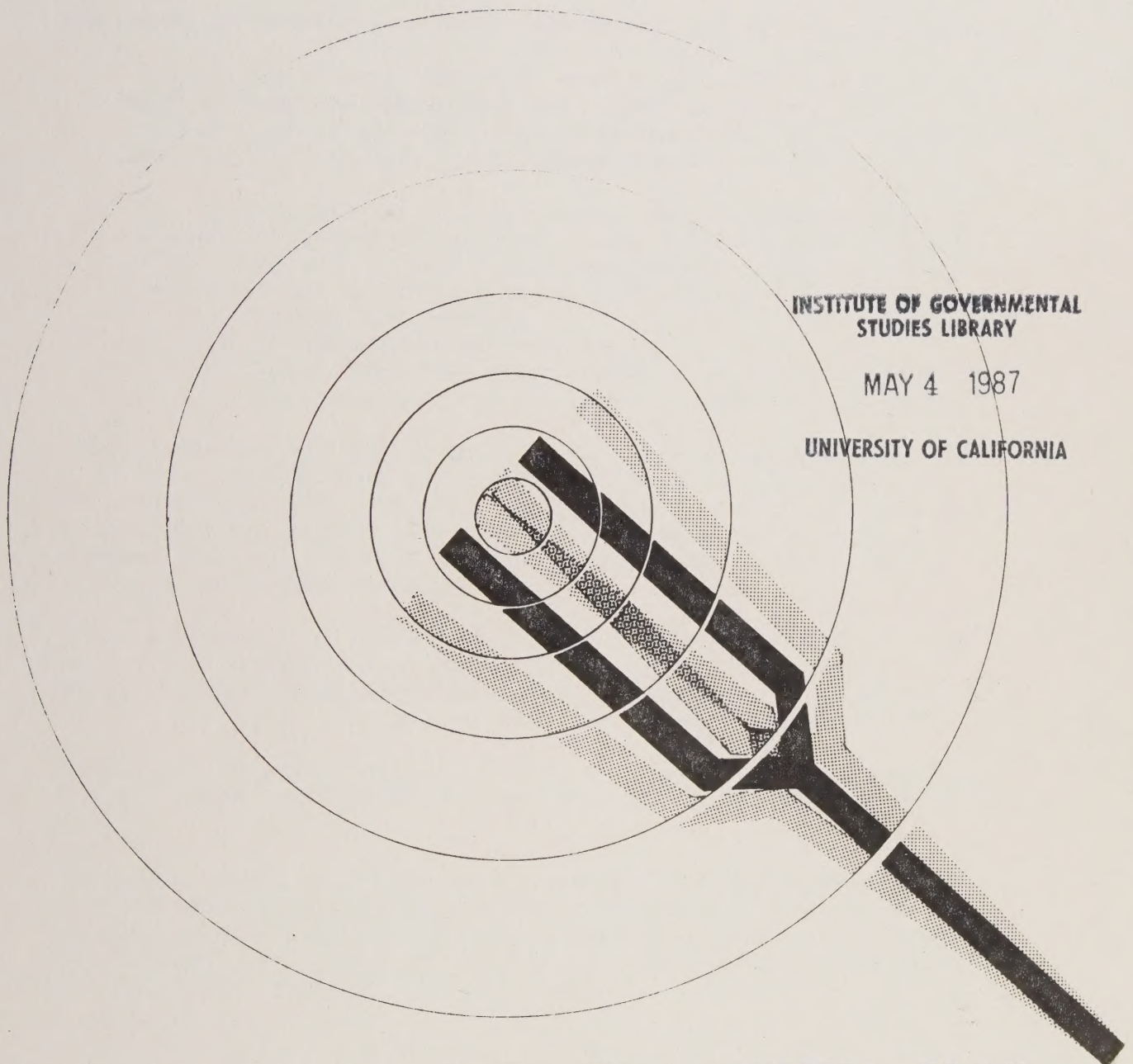
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# NOISE ELEMENT

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**OF THE GENERAL PLAN**  
**City of Chula Vista, Calif.**

**June, 1974**



## NOISE ELEMENT OF THE CHULA VISTA GENERAL PLAN

CALIFORNIA LAW

The State Legislature, in response to the growing noise problem in the several metropolitan regions of California, amended the Planning and Zoning Law (Government Code) in 1972, and thereby required each city and county to incorporate a Noise Element into its general plan, to wit:

"65302. The general plan shall consist of a statement of development policies and shall include a diagram or diagram and text setting forth objectives, principles, standards, and plan proposals. The plan shall include the following elements:

"(g) A noise element in quantitative, numerical terms, showing contours of present and projected noise levels associated with all existing and proposed major transportation elements. These include but are not limited to the following:

- (1) Highways and freeways,
- (2) Ground rapid transit systems,
- (3) Ground facilities associated with all airports operating under a permit from the State Department of Aeronautics,

"These noise contours may be expressed in any standard acoustical scale which includes both the magnitude of noise and frequency of its occurrence. The recommended scale is sound level A, as measured with A-weighting network of a standard sound level meter, with corrections added for the time duration per event and the total number of events per 24-hour period.

"Noise contours shall be shown in minimum increments of five decibels and shall be continued down to 65 dB(A). For regions involving hospitals, rest homes, long term medical or mental care, or outdoor recreational areas, the contours shall be continued down to 45 dB(A).

"Conclusions regarding appropriate site or route selection alternatives or noise impact upon compatible land uses shall be included in the general plan.

"The state, local, or private agency responsible for the construction or maintenance of such transportation facilities shall provide to the local agency producing the general plan, a statement of the present and projected noise levels of the facility, and any information which was used in the development of such levels."

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This report represents the Noise Element of the Chula Vista General Plan.

The report is divided into two sections: Section I, consisting of the chapter summaries of the staff study which preceded preparation of this document, is intended to provide the Planning Commission and City Council with the background for the Noise Policy which is presented in Section II.

The purpose of this Noise Element is to identify existing conditions and to provide general guidelines which will reduce the negative impact of noise on the community in the future. Present and projected community ground transportation noise levels are shown on the accompanying maps.



## SECTION I

### BACKGROUND INFORMATION

#### FOR THE

#### NOISE ELEMENT



## BACKGROUND INFORMATION FOR THE NOISE ELEMENT

### A. INTRODUCTION

The citizens of the City of Chula Vista conduct their daily activities amidst a cacophony of urban sounds. Planes, motorcycles, jackhammers, power lawnmowers and barking dogs rudely intrude upon quieter human pursuits. There was a time when people who did not enjoy the noise and dirt of the railroad or highway could move away from it. For everyone, however, it becomes more difficult with each passing year to find a quiet place because population increases have reduced the buffer space between people.

Environment pollution - of which noise is one element - threatens to deteriorate the quality of life in Chula Vista as in other urban areas. The purpose of the Noise Element of the General Plan is twofold: (1) to identify the main sources in the rising tide of sound which menace our citizenry and (2) to suggest some ways in which the City may move forward to a quieter environment - noise control must become a vital governmental function. Present and projected noise levels may be analyzed and mapped, technical publications may be studied, noise abatement techniques may be surveyed, but until an implementation program enlivens public policy, the Noise Element of the General Plan will not protect the citizens of the City of Chula Vista from the adverse effects of unwanted sound.

### B. SOUND AS NOISE

Understanding of the fundamental properties of sound is basic to any noise study. Sound is a vibration transmitted by molecules of air. The volume of sound is measured in "decibels", a unit proportional to the logarithm of the sound power. When modified by what is called on "A" weighting, the decibel, abbreviated dB(A), corresponds most closely to



how people perceive noise. Typical everyday sound levels range from 30 dBA (very quiet) to 100 dBA (extremely loud) or sometimes higher. Such sound measurements are made with a sound level meter which allow measurements to be made on the "A" scale (dBA) as well as other scales.

Noise is generally defined as unwanted sound. Since that determination is subjective to some extent, over 60 noise rating methods have been developed to facilitate assessment of noise. Two general categories of intruding noises exist: steady-state and intermittent single-event noises. The extent to which a noise exceeds the background noise (i.e., ambient level) is a measure of its intrusiveness.

### C. EFFECTS OF NOISE

The definition of noise as unwanted sound implies that it has an adverse effect upon human beings and their environment. It has not been demonstrated that people are having their lives shortened by exposure to audible noise, but there is clear evidence that exposure to noise of sufficient intensity and duration can permanently damage the inner ear with resulting permanent hearing losses and cause temporary hearing losses that may be chronic in nature.

In addition to the auditory effects of noise, there are physiological, annoyance and sociological effects. It is also apparent that noise can interfere with speech communication and the perception of other auditory signals, disturb sleep, be a source of annoyance, adversely influence mood, disturb relaxation, increase tensions, interfere with the ability to perform complicated tasks, interfere with outdoor recreational activities and spectator events and, of course, can especially disturb those tasks that demand speech communication or response to auditory signals.



#### D. SOURCES OF NOISE

In our technological age the sources of noise seem almost infinite. Four predominant categories of noise - transportation, industrial, construction and population - enable some assessment of noise intrusion to be made. In Chula Vista, as in most metropolitan areas, transportation sources, particularly trucks and motorcycles are the major noise contributors. Therefore, the study of ground transportation noise sources mandated by the general planning law is focused upon vehicular traffic sources. The results of the study indicate that a substantial noise level problem does not exist in the City, but a number of incompatible adjacent land uses do exist. Health care facilities and outdoor recreational sites are located on City truck routes.

Although industrial noises are not a serious problem, construction is extensive and the operating ranges of equipment are high. The severity of population noise is difficult to quantify. The Police Department responds to several thousand noise complaints annually.

#### E. REGULATION OF NOISE

Regulatory techniques must be aimed at one or more of the three steps in the noise chain - the source, the path of transmission and the ultimate receivers. A number of techniques are available to reduce the effects of noise and the range provides many options for regulatory methods.

Chula Vista regulates intrusions by unpleasant or annoying noises that are not easily measured or difficult to control by physical means in a series of municipal ordinances which are known as nuisance laws. Comparison of the City's ordinances with state and national models reveals a number of differences which are delineated in the Implementation Plan of the Noise Study which preceded preparation of the Noise Element.



Ambient noise levels are regulated in the City Zoning Ordinance and forthcoming State building standards by specifying the maximum allowable noise at a fixed point - either a land use zone (performance standards) or within a room (building codes). The standards prescribed in the City's zoning ordinance cannot be enforced with existing City equipment. Addition of an "A" weighted correlation to the standards prescribed would facilitate the full and impartial enforcement which is the cornerstone of effective performance standards.

#### F. ABATEMENT OF NOISE

##### Findings

The City's response to noise sources identified in its environs is facilitated by utilization of regulatory tools, but unless the relationship between the extent of noise problems and the techniques employed to abate noise are balanced, the action taken by the City could be inadequate or unnecessarily complex. Although preemption by federal and state levels dictates the limits of the City's prerogatives relating to noise, the range of options available to municipalities is wide enough to permit Chula Vista to choose the abatement tools to be used in the four areas of identified concern.

##### Transportation

The problem of vehicular transportation noise is one of sheer mass and number rather than individual aggressors. Study of ground transportation noise sources is a basic mandate of the general planning law. Utilizing input parameters of current traffic flow, highway configuration, speed limit and sideline terrain data, an assessment of present and projection of future noise levels was made of all the major roads in the City.



Analysis of the 1973 data, in light of the basic 65 dBA State requirements, reveals that nearly two-thirds, 65.5%, of the street segments studied have day-night equivalent ( $L_{dn}$ ) noise levels which fall within 2.5 dB of that mandate. Since a 2-3 dB margin for error is common in acoustics, a substantial vehicular noise level problem does not exist in Chula Vista. Furthermore, nearly a third, 29.8%, of the remaining segments have noise levels below 62.5 dBA. Of the 4.8% of the segments which clearly exceed the State standard, the highest  $L_{dn}$  rating was 71.5 dBA.

The Legislature suggested 45 dBA levels for areas involving health facilities and outdoor recreation sites. It is in this area that something of a noise problem exists in Chula Vista. The City's truck routes pass through residential areas, adjacent to outdoor recreation sites (e.g., municipal golf course and Memorial Park) and on two sides of Bay General Hospital and Frederick Manor retirement center. Alternative truck routes which would correct these areas of source-receiver incompatibility were considered by the City Traffic Engineer, but alternatives simply do not exist presently for the east-west through routes ("E" and "L") and will not exist for the north-south trucks routes (Broadway and Fourth Avenue) until, and if, the Route 54 freeway is completed. Since rerouting vehicles away from noise-sensitive areas is not a feasible abatement technique, reduction of the noise levels of individual vehicles as a combative method was evaluated. The State Vehicle Code sets noise emission levels, charging local law enforcement agencies with enforcement responsibility. However, the Vehicle Code also prescribes stringent criteria for vehicle noise measuring sites, essentially precluding field application of the noise statute in urbanized areas.

Motorcycle noise, a major source of annoyance to Chula Vista residents, is also subject to State regulatory control. Motorcycle noise is related both to equipment and mode of operation. Although the State prohibits modifying motorcycle equipment in any way which would change conformance to specifications,



a law enforcement officer must be able to determine a modification has been made in order to cite the cyclist. In addition to the weaknesses in the California Vehicle Code, the extreme mobility of these vehicles further handicaps police attempts to enforce the noise statutes.

### Industrial

Industrial noise is most effectively regulated locally. Differing types of intrusive noises are produced by individual plants; local control of zoning together with noise nuisance ordinances and performance standards have provided an early opportunity for noise abatement.

Industrial activity in Chula Vista ranges from small, single machine garage operations to large multimillion dollar, multiproduct operations. Existing Chula Vista industries would not be categorized as excessively noisy and generally are either isolated geographically (South Chula Vista, west of I-5 and the Sweetwater Valley) from residential land use or noise emissions are reduced by intervening commercial land uses or ambient traffic noise levels.

Enforcement of Chula Vista's performance standards which apply to industrial noise is the responsibility of the Current Planning Division of the City Planning Department. The noise provisions which are specified in the Zoning Ordinance have not been utilized for enforcement of the ordinance because the City has not purchased the equipment (octave band analyzer) needed to enforce the standards. Industrial noise problems have been resolved by the Zoning Enforcement Officer through the nuisance provisions of the City Code.

### Construction

Noise associated with construction projects has become increasingly responsible for discomfort in the human environment. Dozens of construction projects of various types and sizes are occurring at any given time in Chula Vista. In 1973 the Building and Housing Department reported issuing 2,601



permits for structures valued at \$30,388,927. The operating ranges of construction equipment rarely occur below 70 dBA, with the modal range being 80-90 dBA. As the City grows, citizens are exposed to these noise levels with increasing frequency.

Abatement in this category of construction site noises will be achieved in part by federal regulations governing decibel output of various types of equipment. While City control occurs through nuisance ordinances which limit construction to daylight hours, the dominant noise sources are the machines which are used and the material on which they interact.

### Population

Noise is a direct product of people in motion. Sounds associated with residences, e.g., lawnmowers, air conditioners, record players, musical instruments and even commercial entertainment, fall into this classification. For the purposes of the staff study, City operations, such as street sweeping, tree trimming and park construction, were also included.

The records of the Police Department and City Attorney enable some assessment of the extent of Chula Vista's population noises to be made. During 1973 the Police Department, including the Animal Regulation Unit, responded to more than 3,300 calls for service which were noise related. A verbal warning is usually sufficient, but in chronic cases, when the complaintant will not press charges against the offender, the Police Department may ask the City Attorney to send a written warning advising that a complaint has been received and noting the section of the City Code which may be being violated. Nearly forty such letters have been sent in the first quarter of 1974. Additionally, in the last three years the City Attorney, whose willingness to prosecute in noise disturbance cases is a helpful noise abatement tool, has filed sixteen noise-related criminal complaints in the South Bay Municipal Court. The majority of cases were brought to trial and the sentences ranged in severity from suspended fines to internment in the County jail.



City Operations: City functions which produce noise comprise the final subcategory of population noises. The majority of such operations are the responsibility of the Public Works Department which considers noise factors in some of its equipment purchases, but not in all. Currently the Department does specify that EPA noise standards should be met except when the work is noisier than the equipment; the lowest bid is accepted even when noise criteria cannot be met. This policy does not take into account the logarithmic nature of sound. The quieting of City operations has not been an area of special focus.

#### G. THE MAPS

To determine the extent of ground transportation noises in the City of Chula Vista, a methodology developed by Wyle Laboratories for the Comprehensive Planning Organization (CPO) was utilized to derive noise contour data. Existing and future noise levels have been plotted for all the major streets on the City's 1990 General Plan map. The freeway and railway noise contour maps were provided by CPO. Examination of the maps reveals the following:

1. The noisiest segment of streets in the study is North Fourth Avenue from "C" to "D" Street which is explained in part by traffic levels, but more importantly by the steep, short grade at that site.
2. The noisiest intersection in the City is North Fourth and "C" Street which is adjacent to the eastern edge of General Roca Park.
3. The location of health care facilities and outdoor recreational sites on major streets and city truck routes precludes the City from insuring that such uses fall within the 45 dBA quiet zones suggested by the State.
4. Ground transportation contours indicate that a substantial noise problem does not exist presently in the City of Chula Vista.
5. Projected 1995 noise levels are well below the 65 dBA limit for virtually all the street segments in the study.



## SECTION II

NOISE POLICY  
IMPLEMENTATION PLAN  
CONCLUSION



## NOISE POLICY

A. INTRODUCTION

Adoption and implementation of the following objectives and policies will ensure that Chula Vista residents enjoy the safety, benefits and amenities which result from a community free of noise pollution.

B. OBJECTIVES

1. To develop a City noise program which recognizes the right of every citizen to live in an environment in which noise is not detrimental to his or her life, health, and enjoyment of property.
2. To develop a noise program which will enhance the amenity of the community.

C. POLICIES

The City of Chula Vista shall:

1. Act to ensure that the comfort, convenience and safety of its residents are not adversely affected by noise.
2. Seek appropriate changes in the City Code to foster an effective Noise Abatement Program.
3. Commit the responsibility for implementation of such a program to all City personnel, particularly management and supervisory personnel.
4. Encourage and stimulate training and education relating to noise.
5. Endeavor to control noise at its source rather than along its path of transmission or by insulating the receiver.
6. Take all possible steps to promote a quiet community.

D. IMPLEMENTATION PLAN

The City of Chula Vista shall:

1. Continue to prohibit excessive noises which are a detriment to the health and safety of its residents.
2. Commit responsibility for regular review of the City's noise ordinances to the City Attorney who should recommend measures which will strengthen the City's noise abatement efforts.
3. Develop consistency in law and practice placing liability for environmental noise on the producers of the pollution.
4. Consider the effects of noise, especially transportation in its land use decisions to ensure noise compatibility.



5. Develop remedial measures to correct areas of identified noise source-receiver incompatibility.
6. Continue to regulate noise in residential and commercial areas through the use of general noise ordinances.
7. Continue to specify performance standards in the Zoning Ordinance.
8. Continue to utilize its Environmental Review Process to evaluate and ameliorate noise impact.
9. Regularly review technological developments in building techniques which improve noise attenuation capacities, incorporating such techniques in the City's law and practice.
10. Request that the Safety Commission sponsor a noise education program for citizens.
11. Provide training to City personnel in techniques to abate noise.
12. Ensure that the operational procedures of the City itself promote a quiet community.
13. Ensure that equipment and supplies bought and leased by the City meet noise standards as a condition of bid.
14. Continue to actively support noise legislation which will enhance our noise environment, reducing noise emissions from transportation, industrial and construction sources.

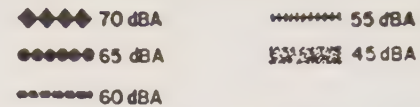
#### E. CONCLUSION

The plan for the implementation of the Noise Element will require the strict enforcement of Chula Vista's existing noise control ordinances, and the City Council's enactment of new legislation, when and where such is indicated. The Environmental Review Process must continue its assessment of the impact of noise upon the order, stability, and quality of life in this municipality and its sphere of influence, and shall recommend legislative and administrative action to bring Council noise policy to fruition.



# GENERAL PLAN GROUND TRANSPORTATION NOISE LEVELS - 1973

## LEGEND

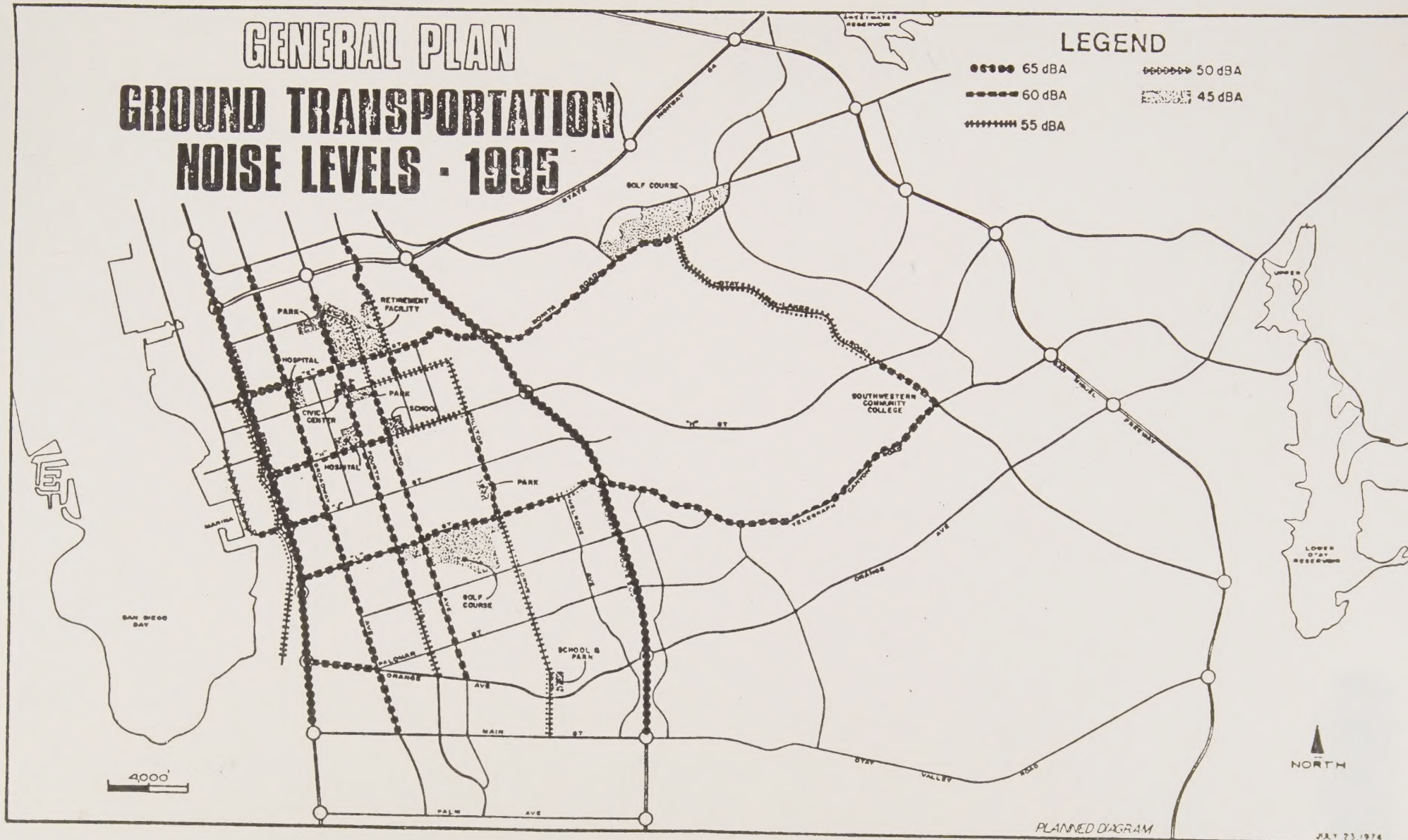


PLANNED DIAGRAM

JULY 23, 1974



# GROUND TRANSPORTATION NOISE LEVELS - 1995



### PLANNED DIAGRAM

MAY 23, 1974



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